

1.414.12911

Harvard University
Library of
The Medical School
and
The School of Public Health



The Gift of



HARVARD UNIVERSITY
SCHOOL OF MEDICINE AND PUBLIC HEALTH
LIBRARY

Harvard Medical Alumni Bulletin

Volume 25, Number 2

June, 1957

ANNUAL MEETING JUNE 13
HOTEL AMBASSADOR ATLANTIC CITY

An achievement in pharmaceutical elegance

MULCIN

puts a smile
in the
vitamin spoon...



Mead's new vitamin emulsion
of unexcelled flavor
and physical qualities

Mulcin's refreshing orange flavor, sunny yellow color and pleasant aroma will bring smiles to the faces of your young patients at vitamin time.

Children and adolescents enjoy taking Mulcin directly from the spoon. For infants, Mulcin mixes easily with formula, fruit juice or cereal.

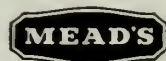
Clear, light texture of remarkable smoothness and non-sticky, easy-pouring consistency enhance the physical excellence of this vitamin emulsion.

A product of pharmaceutical elegance, Mulcin is a distinguished member of Mead's vitamin family.

EACH TEASPOON OF MULCIN SUPPLIES:

Vitamin A	3000 units
Vitamin D	1000 units
Thiamine	1.0 mg.
Riboflavin	1.2 mg.
Niacinamide	8.0 mg.
Ascorbic Acid	50 mg.

Available in 4 oz. and 16 oz. bottles



MEAD JOHNSON & CO.
EVANSVILLE 21, IND., U.S.A.

Harvard Medical Alumni Bulletin

VOLUME 25

JUNE 1951

NUMBER 4

J. Englebert Dunphy, '33, Editor; Thomas B. Quigley, '33, Richard Warren, '34, Associate Editors; Joseph Garland, '19, Wyman Richardson, '23, Editorial Board; Joseph S. Lichty, '33, Business Manager; Mrs. K. B. Wilson, Assistant to the Editor. 25 Shattuck Street, Boston 15, Massachusetts.

Contents

PORTRAIT: THOMAS HINCKLEY LANMAN	119
A REPORT FROM THE COUNCIL TO THE ASSOCIATION	
J. Englebert Dunphy, '33	120
IMPRESSIONS OF SWEDEN	
Walter M. Boothby, '06	122
ARE VETERANS PEOPLE?	
Richard Warren, '34	126
MEDICAL RESEARCH AT HARVARD	
Department of Physiology	129
HARVARD MEDICAL SOCIETY MEETING	132
DUNHAM LECTURE	135
NEWS FROM REGIONAL GROUPS	136
BOOK REVIEWS	137
CORRESPONDENCE	138
STETHESCOPE	139
ALUMNI RELATIONS — EDITORIAL	140
NECROLOGY	141
ALUMNI NOTES	141



THOMAS HINCKLEY LANMAN
DIRECTOR OF ALUMNI RELATIONS

Portrait

Thomas Hinckley Lanman, 1916, whose appointment as Director of Alumni Relations is announced elsewhere in this issue, needs no formal introduction to alumni of the Harvard Medical School. A member of the Faculty for more than 30 years, and since 1947 Clinical Professor of Surgery, Dr. Lanman has been regarded with deep affection and esteem by a whole generation of Harvard medical students. His ward rounds in pediatric surgery at the Children's Hospital have been high points in their medical education, exposing them to the best in professional knowledge and stimulation, and at the same time offering an enriching personal experience with a teacher who has a warm and sympathetic interest in his students and a winning modesty about his own achievements.

These achievements occupy an important place in recent surgical history. His training in the field where he was to make his most outstanding contribution began immediately after graduation from the Medical School with a surgical internship at Massachusetts General Hospital. Returning to Boston after service in the first World War, Dr. Lanman found himself somewhat at loose ends with regard to his future. The late Dr. James Stone, chief of surgery at Children's Hospital, invited him to serve at that institution in the then unusual six-months' internship in pediatric surgery. More specialized training came with two years (1920-22) as a Fellow in urology at Peter Bent Brigham Hospital. This background led naturally to an interest in the urological afflictions of infancy and childhood, particularly the problems associated with extrophy of the bladder. While still a young man, he embarked on pioneer treatment of this difficulty. Largely through his efforts, successful treatment of this once-fatal condition has become an established and well-accepted surgical procedure. One evidence of the fruitfulness of these early studies is Dr. Lanman's current interest in 20- and 25-year follow-ups on his first patients.

His association with Children's Hospital, like that with the Medical School, has been continuous since 1920, and he now holds the rank of Surgeon there. In addition, he is chief of the children's surgical service at Mount Auburn Hospital, Cambridge, and consulting surgeon to Malden Hospital. For thirteen years he found time also to serve as surgeon to Milton Academy, and the wide experience in trauma in young men thus gained was undoubtedly useful to him in the second World War.

In the field of service to country and government, Dr. Lanman's contribution has also been notable. In the first World War, close on the heels of graduation from medical school, he had a year in France with Base Hospital 55. In World War II, as early as 1940, Dr. Lanman was one of the original group comprising the reactivated Fifth General Hospital, a Harvard-affiliated unit. For a few months in North Ireland in early 1942 he served as its chief of surgery. As the American invasion of Britain mounted, his abilities were needed elsewhere and for the last three years of the war he bore the titles of Consultant to Western and Southern Base and Consultant to the 12th Hospital Center. The duties of a consultant in surgery in the European Theatre of Operations have been described as two-fold: the smoothing of ruffled feathers on the upper back with one hand and the application of more direct stimulation to the lower back with the other hand. So successfully was this therapy applied to a heterogeneous group of able surgeons who rebelled against the regimentation of war that Dr. Lanman received the Legion of Merit from a grateful government. Since donning civilian clothing for a second time, Dr. Lanman has continued his public services as consultant in surgery at the Veterans Administration Hospital in West Roxbury; and since February he has been chief consultant of the Medical Division in the Boston Regional Office of the Veterans Administration.

Mention of only a handful of Dr. Lanman's many offices and responsibilities in professional societies is sufficient to indicate that his colleagues, like his students, have long had a high regard for his abilities and qualities of leadership. He was president of the Boston Surgical Society in 1948. After serving as president of the New England Surgical Society in 1946-7, he is now representing that organization on the senior board of the American Board of Surgery. Last October he was elected first vice-president of the American College of Surgeons. As the most recent in a long list of similar honors, he was named presi-

dent-elect of the Massachusetts Medical Society at its meeting last month.

Throughout this busy and effective career, there has been time also for a keen interest in the general development of the School and for personal contacts not only with graduates of his own generation but also with those of later years who had been his students. Now, in the newly-created position of Director of Alumni Relations, he is being asked to put these experiences to practical use in the service of the Alumni Association and the School, as they seek to work out a closer and more dynamic relationship.

*A Report from the Council to the Association**

J. ENGLEBERT DUNPHY, '33

Secretary, Harvard Medical Alumni Association

For many years there has been a feeling among the alumni that in comparison with other medical schools very little has come of the Association since its rather auspicious beginning in 1890. To some extent this impression stems from poor publicity. Many alumni have forgotten or are unaware of the important contributions which the Association has made in the past, such as its role in raising funds for Vanderbilt Hall and the establishment of the very substantial "Permanent Harvard Medical Alumni Fund." On the other hand it is true that much might have been done that has not been done and there is the widest variation in the interest and activity of different classes. Furthermore, although the administration of the Medical School has maintained the keenest interest in the alumni and in their ideas concerning medical education, inadequate machinery for close collaboration has con-

cealed many accomplishments and at times created an impression of comparative indifference. These deficiencies have been a source of concern to Dean Berry and during the last two years the Council has been making a careful study of this matter.

APPOINTMENT OF A DIRECTOR OF ALUMNI RELATIONS

As an initial step to improve the situation the Council voted this Spring to establish a position to be known as the "Director of Alumni Relations." The incumbent of this post will bring to the Alumni Office the time and effort needed to expand its present facilities and personnel, to bring visiting alumni more intimately into the orbit of the Medical School and to promote more active relationships among the alumni themselves through regional or class organizations.

The Council feels particularly fortunate in having been able to persuade Dr. Thomas H. Lanman to fill this position.

A HARVARD MEDICAL SCHOOL FUND

The decision of the Council to establish a Harvard Medical School Fund will be

*It is customary for the Secretary to describe the activities of the Council in a brief statement at the time of the Annual Meeting. This year however two decisions of the Council are of such importance that a more detailed report to the alumni is warranted.

welcomed by all of the alumni. In the past the Harvard Fund Council has solicited graduates of the Medical School and contributions if specifically marked for that purpose have been so credited. Although much has been accomplished through this mechanism the majority of the alumni have viewed it as a *University* rather than a *Medical School* endeavor. Members of the alumni wishing to make substantial contribution to the Medical School have been uncertain whether to do it through the Harvard Fund Council, through the Alumni Association or through their Class 25th Anniversary gifts. The following letter is typical of many that have been received by the Dean or the Alumni Office.

"Dear Dr. Berry:

I was a student in the Medical School 1925-29, graduating in 1929 with an M.D. degree.

I would like to know if it is possible to ascertain the amount of money above the tuition fee which the School spent in educating each student during those years. I realize the Medical School expends a certain sum of money yearly over the tuition fee for each student. I am interested in these figures for the years 1925-29 if they are readily available.

I would also like to know if money is given to the School for specific purposes. Can it be credited toward the amount that may be given at any time as a class fund? In this case the Class of '29."

Following receipt of a letter from Dean Berry explaining the needs of the School and the mechanisms by which gifts could be made, the writer of this letter then made a most substantial contribution to the School.

This spontaneous desire of many of the alumni to have a more tangible mechanism for making contributions to the Medical School coincides with a very real need. Twenty years ago the annual cost of educating a doctor at Harvard was about \$2,000.00. The tuition was \$400.00. The difference was readily met by legacies and foundations. Today the cost is nearly \$5,000.00 and the tuition is \$800.00. As a result, the Harvard Medical School is today spending hundreds of thousands of

dollars a year beyond its income,—and to meet the challenge of today, it should be spending even more. In recent years this has been accomplished in part by gifts and grants and in part by help from University funds. However, the financial demands on the University are such that this source of aid cannot be continued and the Medical School as well as other graduate schools of the University must now work out their own financial destiny.

In the case of the Medical School some aid may eventually be forthcoming from the federal government, but as a counter-balance to this type of assistance and in order to maintain the pre-eminence and independence of the Harvard Medical School, substantial yearly contributions from the alumni will prove of inestimable benefit. It is for these reasons that the Council unanimously voted to establish the Harvard Medical School Fund.

The details of its workings are not yet completed. Eventually, with the approval of the University and the alumni, the funds already set aside in the Permanent Harvard Medical Alumni Fund, now amounting to over \$40,000.00, may be added to it. In general, however, the new Fund is designed as a mechanism which will aid and abet what has been going on for many years, namely, the support of the School by its loyal alumni. It is intended that in most instances all alumni contributions, individual and class, will channel through the Fund, thus providing the Medical School with an annual grant of hard money with which it can defray a major portion of its annual deficit.

In varying degrees the vast majority of the alumni have been contributing in one way or another to the support of the School. This plan will bring these efforts into a single Fund. It is hoped that with this more tangible mechanism available many will see their way to more substantial contributions than in the past. It is certain that if the School is to maintain its dominant position in the field of medical education it must have continued yearly support from its alumni.

Impressions of Sweden

WALTER M. BOOTHBY, '06



During the last part of World War II most friendly relations developed between the United States Air Force and the Swedish people as well as the Swedish Air Force as a result of the hospitable treatment our fliers received whenever they were forced to make emergency landings anywhere in Sweden. In return, after the war, when Sweden wished to train several of their young physicians in aviation medicine they were welcomed by our various University and Service laboratories specializing in this field.

Shortly after the war the Swedish National Research Council established a Committee on Naval and Aviation Medicine under the Chairmanship of Professor

Georg Kahlson, Head of the famous Institute of Physiology, University of Lund. Under the auspices of this Committee two laboratories were projected—one at the Institute of Physiology, Lund, and the other at the Karolinska Institute in Stockholm. In 1948 I was invited, at the suggestion of my former pupil, Docent Lundin, to be Research Advisor at the laboratory in Lund of which he is chief. This laboratory was to specialize in respiratory and high altitude physiology. The laboratory in Stockholm under Docent Bjurstadt was to construct a centrifuge and concentrate on acceleration.

Very pleasant dinners and cocktail parties in and around Lund were arranged by those interested in aviation medicine; the group was known as the "Vikings." At these meetings the old Swedish custom of skaling was maintained; one of the main points being that you must never take a drink alone—you must skal someone around the table. Many of the old Swedish drinking songs were sung during the parties and they were always jolly affairs.

Swedish medicine, in fact the entire educational system, transportation and heavy industry are "socialized." The system as it has been developed and slowly grown up in Sweden works well. All professors and educators are greatly respected. They and their families are at the top of the social scale, excepting, of course, the royal family. The professional appointment is for life and the salary is good. Besides they often earn additional income as they may act as private consultants, or they may serve with extra pay as advisors to other government or civilian bodies.

The title "Docent" corresponds closely to our associate professor; it is not a life

Walter M. Boothby has had a long and distinguished career in the pioneer field of aviation medicine. Today, at 70, two years after his formal "retirement," he is still accepting new enterprises and responsibilities in his chosen area of study with unflagging interest and enthusiasm.

Born and educated in Boston (Harvard College, 1901; Harvard Medical School, 1906), his early professional years were spent as a surgeon in that city. In 1912-13 as a Harvard Sheldon Traveling Fellow, with opportunities for study (Continued on page 125)

appointment, usually being for three to five years, many finally becoming professors. Everyone, rich or poor, has the right to go to the Medical Clinics and University or municipal hospitals. The patient pays a small sum for hospitalization but the bed-rate per day is far lower than the actual cost of the excellent service provided. In addition each "District" has one or more salaried physicians to whom the people may go for office or temporary home medical care; if seriously ill the patient will be hospitalized immediately in a local public hospital. If the patient lives in an isolated region an air ambulance will be sent to fetch him to the hospital. Most of the District physicians also have private patients; some have a very large and lucrative practice but the fees are maintained at a reasonable level. The dividing line that separates a "free patient" from a private patient does not appear to be rigid and seems in large part to be personal; the borderline between the groups is not a general topic of public discussion as in Britain. The system works quietly and apparently well and with great satisfaction to both the patient and physician.

There are no slums in Sweden; the cost of living is higher than it used to be but still low; excellent apartment houses are now plentiful of which only a few are of the super-luxurious type. The professors, docents, teachers and upper civil servants are held in high esteem and live well; they are happy, dignified and reticent; they love their homes and gardens and take tremendous pride in them. The workers are well off; they work hard but enjoy many holidays. Most of them own their apartments which they buy or sell whenever they move from place to place. The Government lends money to the individual to buy his apartment as a rule instead of renting; thus the building of all classes of apartments is stimulated and indirectly financed by the Government so that nearly every worker's family has that stability engendered by owning its own home of which it is so proud. The result is that

the homes are clean and well kept, the children are well behaved and not destructive, the surroundings are not littered up with rubbish. Along the docks, beside the railroad tracks, everything is clean and orderly. There is little difference between neighborhoods—between new and old—and there is no "wrong" side of the track. The differences that do exist are negligible when compared with the extreme conditions existing in most of our cities.

Free speech and a free press are permitted in Sweden; free groups are everywhere. Sweden has long been the haven for some individuals of the oppressed groups of Europe; after a few years they are absorbed and become good Swedes. However, Sweden is blest in being the haven for the educated middle classes; there are no large colonies of illiterate aliens that tend to live in slums because of unemployment. How this is accomplished, I do not know. There is strict police supervision, but it is polite, firm and considerate. In some way "undesirables" do not get in, or if they do, they do not stay long. Every foreigner must register with the police and must report all his earnings for tax purposes. Usually the tax is withheld at its source, at least for all the government workers. An alien also pays a local tax for permission to live there. During our two years' stay we usually had to cash Express checks at the bank as few stores were allowed to accept them. To cash more than \$80.00 at one time, it was necessary to fill out papers, explain the need for the money and then have the bank send the request to Stockholm for permission to cash the checks. However, we could go to the bank every day and get the maximum of \$80.00. This is what we did in order to accumulate enough money to pay for travelling expenses—plane tickets to England, etc. The whole procedure was somewhat of a nuisance and the purpose of the regulations not too clear. During and since the war, in order to maintain the currency, restrictions on imports are rigid and Swedes are allowed to

buy only small amounts of even "soft currencies" for foreign travel.

A very large proportion of individuals are directly or indirectly Government employees; they are all very courteous but carry out their duties strictly and with firmness. They take time to help everyone, and there is not the slightest evidence of graft. Like all government workers they are prompt to arrive and to depart from work; there are plenty of them to take care of peak loads so they take time to be excessively courteous. Everyone in Sweden is employed. Their sickness, old age benefits and pensions are relatively large and are universal. Everybody has paid for Social Security through income withholding taxes. Even the lowest paid workers pay a tax and I believe there are no exemptions such as we have; it amounts to an enforced insurance for everyone. As they have paid for their benefits they accept them as their right which they have willingly bought just as we would accept the earned benefits that we receive from our private accident, sickness or fire insurance. The real difference is that in Sweden everybody is covered, therefore the rate is low. One hears occasionally of an individual abusing his sickness benefits but the proportion who do so is probably very small. Abuse seems to be prevented more by the influence of public opinion rather than by supervision and enforcement of rules.

Most of the old feudal estates are broken up and the castles and gardens are museums and public parks. Inheritance taxes are extremely high. The farmers now own their land and buildings, aided by loans from the State agencies. There is no Communism of the Soviet type; possibly the term "Commonwealth" as originally used in our Colonial days might be more applicable in Sweden than the term "Socialism" which at least with us has come to have a bad connotation.

The educational system, elementary, secondary and university, is excellent and integrated. One of the reasons for the

high character and efficiency of the large civil service is that, for the various respective grades, an appropriate educational standard is maintained and for many of the higher positions, especially professorial, competitive open examinations are required.

There are three medical faculties—one at each of the two State Universities, Uppsala founded in 1477 and Lund in 1688; the Royal Caroline Medico-Surgical Institute in Stockholm is also a State institution but not so closely affiliated with the other faculties in Stockholm as to form a closely knit university organization for higher education, apparently because each faculty has its own separate traditions and also some endowment of its own which it likes to maintain intact.

The Medical Faculty of the Karolinska Institute was made responsible by Alfred Nobel for the Award of the two Nobel prizes concerned with the medical sciences—Physiology and Medicine. For this reason and because it is situated in the capital it was the first of the three medical faculties to be completely equipped with modern teaching and research facilities. Probably nowhere else in the world to-day are such complete and integrated medical facilities and such a strong staff grouped together essentially as one unit as in what is known as the "Karolinska" group.

Rarely does a visitor have time and opportunity to obtain a proper perspective of the whole group. Briefly, it is composed of the new Karolinska Hospital, complete with its own clinical laboratories and all specialties including an underground bomb shelter capable of holding all its patients. Across the street is the Karolinska Institute with teaching and research laboratories for medical students, where teachers for the clinical and laboratory services are also developed. Adjacent are the laboratories of the Nobel Institute in which only medical graduates, native and foreign, of high quality are accepted for advanced work in what may be designated as pure medical science. In the Nobel In-

stitute the professors and their associates give their full time to advanced biological research without medical undergraduate teaching obligations.

Now that the facilities for the Karolinska group are nearly completed the medical faculty at Lund University is receiving each year large funds to build new modern hospitals for the various specialties. A new laboratory building for the Institute of Physics especially adapted for nuclear research was completed and opened recently. Ground has been broken for a modern laboratory for teaching and research in physiology and aviation medicine. A laboratory for pharmacology and biochemistry was finished shortly before the war.

The other disciplines will in turn be given new and enlarged quarters.

Plans are under way to establish a fourth medical faculty at the University of Gothenburg, the big commercial and shipping center on the west coast of Sweden.

Complete facilities both for education and for the preservation of health are assumed to be the responsibility of the State. These duties are being carried out with the approval and cooperation of all.

Among our many visitors from the United States during our two years in Lund none was more welcome to my wife and myself than my Harvard roommate, Nat Faxon, and his delightful wife, Marie, also an old friend of mine.

(Continued from page 122)

in Europe with Haldane, Barcroft and Krogh, he first became interested in respiratory physiology. On his return to Boston, his particular abilities were recognized by Harvey Cushing, and he was placed in charge of the newly-established Metabolism and Respiration Laboratories at Peter Bent Brigham Hospital. In 1916, he was called to the Mayo Clinic as head of the Section on Metabolic Research. Here he remained for 32 years of fruitful research in respiratory physiology and aviation medicine, interrupted only by 22 months of active service as a surgeon with the A. E. F. in France. At Mayo he steadily climbed the academic ladder to become professor of experimental metabolism (1936-48). On his retirement in 1948, he was named professor *emeritus* of the Mayo Foundation. The University of Minnesota similarly recognized his long years of service by awarding him its Certificate of Merit in 1949.

Even before the outbreak of World War II, the practical values of his studies in aviation medicine were becoming well-known. In 1939 he was one of the recipients of the Collier Trophy, awarded for contributions to the knowledge of aviation medicine in general and pilot fatigue in particular. It was during the War, however, that his specific abilities were especially in demand. He served as chairman of the Mayo Aero-Medical Unit for Research in Aviation, and

as a member of the Subcommittee on Oxygen and Anoxia of the National Research Council.

Retirement from the Mayo Foundation in 1948, far from leading to a life of leisure, has served only to open up for Boothby more widespread opportunities for continuing his researches and sharing his knowledge. For two years he was in Sweden, at the Institute of Physiology of the University of Lund, as research advisor to the Swedish Committee on Naval and Aviation Medicine. Not content with this European experience, Boothby planned next a visit to the Far East, and had accepted an appointment as visiting professor of physiology at the University of Malaya, Singapore, when the Korean situation forced him regretfully to cancel these plans. Instead, he accepted an invitation from a former pupil, Brigadier General Otis O. Benson, Jr., Commandant of the School of Aviation Medicine, Randolph Field, Texas, to be research advisor and professor of physiology there. Since it would "take an Act of Congress to hold a civilian after his 71st birthday", his appointment there must end this coming July. At that time, again at the invitation of a former pupil (William R. Lovelace, III, '34), he will go to Albuquerque, as a member of the Lovelace Foundation for Medical Education and Research.

We are happy to present Boothby's informal and interesting report on his experiences in Sweden.

Are Veterans People?

RICHARD WARREN, '34

Have you heard that "Socialized Medicine" is here and here to stay? It is true. The United States Government is building for use by the Veterans Administration 78 new hospitals to add to the 136 now in operation. This multimillion dollar venture, which will bring the total bed capacity of Veterans Administration Hospitals up to 143,000, is only a fraction of a tremendous building program which will allegedly be required to care for the estimated 300,000 veterans who will be sick by 1975. Such estimates, furthermore, are only on the basis of our current veterans population of 19,000,000 souls. Stable, indeed, would be the imagination which did not reel at the prospect of the further expansion which, if this policy is continued, will follow the Korean War and universal military service. Under present methods of interpreting eligibility laws the number of eligibles for care will eventually not fall far short of a figure which will include all the adult males, and many of the females, in the country, and so reach an order of magnitude of over 60,000,000.

Is this or is this not as it should be? Let us examine some of the issues involved. Disregarding for the moment the controversial moral question of what a country owes its veterans and considering only the practical sociological viewpoint, history has shown that unless veterans benefits are provided crime waves and revolutions follow major wars. As early as the days of the Gracchi, a century and a half before Christ, such benefits took the form of land grants. Octavius Caesar first made his reputation as an administrator by dealing tactfully with this problem in the early days of the Pax Romana. A thousand years after the fall of Rome when the pattern of strong central governments was again emerging from the dark ages, the problem once more arose. The defeat of the Spanish Armada was followed by the liberation from the armed forces into the population centers of England of a rest-

less mass of unemployed and property-less individuals without training in civilian skills. There arose a crime wave of proportions which forced, in 1592, the passage in England of the first modern law arranging for invalid and widows pensions to be administered by a central government. Since that time federal bureaus to administer such laws have come into existence in all nations.

Looking at the historical record, therefore, no one will deny the necessity or desirability of veterans legislation. But in this country the degree to which it has expanded is absurd. During the Revolution invalid and widows' pensions were provided by the Continental Congress. This did not, however, satisfy the patriotic zeal of our ancestors, the soldiers of the Revolutionary Army. They demanded of Congress during the darkest days of that dark winter at Valley Forge half-pay for the rest of their lives following the cessation of hostilities on condition of service to the end of the War. When Congress demurred they declined to disband from convention until their wishes were granted. Congress perforce gave in, and well we may blush at the pattern which was thereby set for the motives which have stimulated subsequent veterans legislation, since they have been dictated by similar pressure groups rather than by sound social principles and true need. Not only death and disability (both that incurred in combat and otherwise) but the mere fact of service must be lavishly recognized. In 1931 and 1932 this country was spending more money on its veterans than England, France, and Germany combined although our manpower commitments in World War I were less than the combined total of those nations by a ratio of 1 to 7.

Surely the degree of this expansion is out of proportion to the will of the electorate. Indeed it is probable that most of the voters in the country are not aware of what

is occurring. Let us consider for example the Medical Service of the Veterans Administration. If one excludes hospital construction the cost of this department is only between 5 and 10 percent of total Veterans Administration expenditures. Yet, since most of the other activities of the Veterans Administration concern themselves with the allotment of funds in the form of pensions or educational (re-adjustment) benefits, the Medical Service represents the major activity of the Veterans Administration in terms of a dispensable service. Was it the intent of the people acting through the 74th Congress, which in 1935 passed Public Law 312, that all veterans who are ill from any cause at any time should be eligible for and receive free care? Surely not. The intent of that law was to use the empty beds then existing in veterans hospitals to relieve overloaded municipal and community hospitals of veterans who had long term illnesses or who were unable to pay for care. This was an expedient and beneficial measure. But the intent of the voters has been now so distorted by those responsible for hospital construction in the Veterans Administration that the good which was done tends to be undone by robbing civilian hospitals not only of multitudes of patients who are able to pay something towards a hospital bill or sickness insurance, but also of nurses, trained technicians, and other key personnel.

These Federal Hospital Builders have misrepresented the law by assuming, in effect, that *all* veterans are unable to pay for medical care and have raised their sights accordingly. To anyone working in a veterans hospital it is obvious that this assumption is incorrect. The majority of veterans hospitalized for non-service-connected disabilities (who make up more than two-thirds of the patient population of veterans hospitals at the present time) are active wage earners with responsible jobs. The political power of the Federal Hospital Builders has lain in the fact that they can show documentary evidence to

back this false assumption. These documents are the papers which a veteran signs on admission to a hospital stating that he is unable to afford the care he is about to receive. Since neither he, nor the doctor nor anyone concerned can tell how much that care is going to cost and since the individual's private resources are never investigated nor his statements contested, the value of such a document is low.

Since World War II, thanks to men with vision (Bradley, Hawley, Cutler, and others), the standard of medical care in Veterans Administration Hospitals has been elevated to a high plane. This has been effected by soliciting and receiving the support of the medical schools and has thus in most cases also involved indirectly the civilian "teaching" hospitals connected with those schools since the staff of the one coincides with the faculty of the other. These bodies have participated in good faith. The future planned over-expansion will compromise that faith by operating to greatly restrict, if not to immobilize the activities of many of those very institutions. It is, indeed, not difficult to envisage the closing of certain of our big civilian teaching hospitals if and when the outlined Veterans Administration construction program is complete.

It is important to note that to date hospital construction planning has not been under the control nor even had access to the advice of the Veterans Administration Medical Service. Most employees of that Service, both administrative and professional, are opposed to further expansion. They realize that it would either dilute the quality of medical care which they can provide or seriously dislocate the civilian teaching hospitals which, with the medical schools, are the institutions upon which they in the last analysis depend.

In an attempt to present this subject without bias it is only fair to mention that there are certain advantages which some progressive sociologists think might accrue from the unlimited development of the program as outlined. If Socialized or

Federalized Medicine is a good thing, as many such persons maintain, is not the Veterans Administration a clever device to demonstrate it to the American people who would otherwise balk at the stupendous decision which would be thrust upon them if suddenly asked to vote federalized medicine into being? Perhaps. Furthermore, there are aspects of the administration of care in Veterans Hospitals such as lack of competition among doctors, free consultation, lack of financial pressure to discharge prematurely patients who cannot pay, and others which are preferable to their counterparts in civilian hospitals. Again, granted. The important thing, however, is to put the pros and cons of this tremendous movement before the people rather than to masquerade further under the false banner of "nothing is too good for our disabled boys." If there are those who think that this is what the nation wants it is but fair to call the program by its right name, "The United States Program of Free Federal Medical Service For All Adult Males." Then let them put it to Congress for a vote.

It is later than we think. It often happens that when the implications of a great movement such as this become clear it is so far advanced as to be difficult to stop. If the people do not want Free Federal Medical Service for all Adult Males what is the practical alternative? Simply to stop building veterans hospitals now, and to alter or interpret the law so as to allow

admission to current hospitals, in addition to all service-connected disabilities, only to those non-service-connected cases who need long term care or who cannot afford medical insurance. There are good reasons why these two groups of non-service-connected veterans should be retained as eligible. The first is that exclusion of all non-service-connected veterans would limit the type of medical and surgical practice available to the highly trained doctors now serving in veterans hospitals and would so cause widespread resignations. The second reason is that many of the hospitals in the expanded building program are already built. It would indeed be a waste if due to a late awakening of the electorate, policies were so strongly reversed that these hospitals should stand empty. And finally let us recommend that future planning for Veterans Administration hospitals be placed in the hands of the Veterans Administration Medical Service and be based roughly on those potential segments of the veterans population which in the years to come will need long term care or will be unable to afford sickness insurance rather than on the total number of sick veterans regardless of circumstances. Such a policy instituted now would preserve a balance between civil and federal medical systems which would be beneficial to both. It would enable our present great veterans hospitals which have already had such an auspicious youth to continue to mature in personality and prestige.



Medical Research at Harvard

DEPARTMENT OF PHYSIOLOGY

(Reported by Lester Grant)

A series of experiments, designed to characterize capillary permeability in terms of the functional structure of the capillary wall, has stimulated a considerable amount of interest in the community in recent months. The results have broad implications for workers concerned with the composition of plasma substitutes, with practical clinical problems, such as shock and hemorrhage, and with the theory of transcapillary exchange processes.

These experiments have been conducted over a period of years, in the Medical School physiology department, by Dr. John Pappenheimer, E. M. Renkin, 3G, and L. M. Borrero. Recent interest in the work stems, in part, from a report presented by Dr. Pappenheimer before the Harvard Medical Society in December. The investigators studied the rates of diffusion of various molecules through the capillaries in isolated perfused cat hind limbs. They concluded that capillary permeability to water and to lipoid-insoluble molecules may be described in terms of the area and dimensions of openings in the capillary walls. (The January issue of the *BULLETIN*, page 57, carried a summary of the report.)

Getting the measurements demanded a suitable preparation—a special apparatus for perfusing the hind limb of the cat (or any other appropriate experimental animal)—but it was also necessary to discern certain elegant relationships among a series of well-known physico-chemical principles, each expressible as an equation. By simple algebra, the experimenter was able to shake out of the equations certain expressions which he could not measure, leaving him with equations from which it is possible to solve for properties of the capillaries in terms of measureable quantities. These principles and equations, have been available in text books for years. Other researchers have conducted experiments along roughly similar lines, but the theoretical structure for this work has been fashioned at Harvard.

The principles which Dr. Pappenheimer and his colleagues have utilized to reach their conclusions may be stated as follows:

1. The Fick Principle. This states that the rate at which molecules leave the vascular system is equal to the blood flow through the capillaries multiplied by the difference in arterial and venous concentration of the molecules. The principle can be expressed in the following equation:

$$\frac{dn}{dt} = Q_b (C_a - C_v),$$

where n is the number of molecules leaving the capillary, t is time, Q_b is blood flow, C_a is the arterial concentration, and C_v is the venous concentration.

2. Fick's Law of Diffusion. This states that the rate at which the molecules diffuse is equal to the molecular diffusion coefficient multiplied by the area of the pores, multiplied by the mean concentration gradient across the capillary walls. In an equation,

$$\frac{dn}{dt} = (D) (A_p) \left(\frac{\Delta c}{\Delta x} \right)$$

where D is the diffusion coefficient of the test molecules, A_p is the area of the pores, Δc is the mean concentration difference across the capillary membrane and Δx is the distance traveled by the molecule.

3. van't Hoff's Principle. This states that the osmotic pressure exerted by the added molecules across the capillary walls is equal to the mean concentration difference across the capillary, multiplied by the gas constant, multiplied by the temperature of the system in question. Or,

$$P = \Delta c RT$$

Methods for measuring the effective osmotic pressure, P , within the living capillaries of the perfused hind limb were developed previously in the Harvard physiology laboratory (*AJP* 152, 471-491 (1948)).

One can now examine these three for-

mulations for the pore area per unit path length, and draw some conclusions:

Here are the three equations, lined up together:

$$\frac{dn}{dt} = Q_b (C_a - C_v)$$

$$\frac{dn}{dt} = (D) (A_p) \left(\frac{\Delta c}{\Delta x} \right)$$

$$P = \Delta c RT$$

Things equal to the same things are equal to each other, so the first two expressions can be combined, eliminating $\frac{dn}{dt}$. This leaves

$$Q_b (C_a - C_v) = (D) (A_p) \left(\frac{\Delta c}{\Delta x} \right)$$

But the exasperating feature of this equation is that Δc cannot be measured directly, because one knows neither the concentration gradient along the capillaries nor the concentration in the tissue fluid outside the capillaries. The pore area per unit path length, $\frac{A_p}{\Delta x}$, cannot be meas-

ured in this formulation, either (indeed, this is one of the unknowns which the experimenter is seeking to measure), so one has, in the above expression, a single equation with two unknowns. The van't Hoff expression, which also carries a Δc , provides a way out of this dilemma. If, as stated above, $P = \Delta c RT$, then $\Delta c = \frac{P}{RT}$.

On substituting $\frac{P}{RT}$ in the equation

$$Q_b (C_a - C_v) = (D) (A_p) \left(\frac{\Delta c}{\Delta x} \right),$$

one gets

$$Q_b (C_a - C_v) = (D) \left(\frac{A_p}{\Delta x} \right) \left(\frac{P}{RT} \right).$$

Thus one has eliminated from the three original equations $\frac{dn}{dt}$ and Δc and has

achieved an expression which can be written as follows:

$$\frac{A_p}{\Delta x} = \frac{Q_b (C_a - C_v) RT}{(D) (P)}$$

where A_p is the collective area of the pores and Δx is the path length traversed through the wall by the molecule. All of the quantities on the right may be measured experimentally, thus revealing the area for diffusion per unit path length through the capillary walls. In practice, a test molecule species (e.g., sucrose) of known diffusion constant (D) is suddenly introduced into the arterial blood supplying the hind limb. At various intervals after the injection, arterial and venous blood samples are collected for chemical analysis of the test molecules and the *in vivo* osmotic pressure set up by the molecules is measured. Blood flow and temperature are measured and maintained constant. In this way, all quantities on the right hand side of the above equation are measured. For a small molecule such as NaCl a typical value for $\frac{A_p}{\Delta x}$ is 0.7×10^5

cm. per 100 grams of tissue. For a capillary wall thickness of 1 micron (10^{-4} cm.), this leads to a total pore area of

$$A_p = 0.7 \times 10^5 \times 10^{-4} = 7 \text{ cm.}^2$$

But in the same tissue the measured histological area of the capillaries is about 7,000 cm.². So one is permitted to conclude that only about 7/7000, or 0.1%, of the capillary membrane is involved in the exchange of NaCl.

Similar measurements have been made for glucose, sucrose, ferro-cyanide, raffinose, inulin, egg-albumin and hemoglobin. It has been found that the area in the capillary walls available for free diffusion of these substances decreases in predictable fashion with increasing molecular size. For inulin the available area is only 15% of that for a molecule the size of water, and for hemoglobin it is essentially zero.

Once the diffusion area for a molecule the size of water is known, it is possible to solve for the dimensions of any given pore geometry. Thus, if the pores are cylindrical tubes, the solution is as follows:

Poiseuille's Law of flow through tubes states

$$\frac{Q}{P} = \left(\frac{A}{\Delta x} \right) \left(\frac{r^2}{8\eta} \right)$$

where Q is the flow, P is the pressure difference, $\frac{A}{\Delta x}$ is the area per unit path

length, r is the pore radius and η is the coefficient of viscosity. The value of capillary filtration per unit pressure difference across the capillary wall (e.g., $\frac{Q}{P}$) was first de-

termined by Professor Landis in single capillaries of the frog's mesentery, and has since been determined by Dr. Pappenheimer in the capillaries of the perfused hind limb. Its value in this preparation averages .017 ml/min/mmHg pressure difference across the capillary walls, and it is known as the filtration coefficient, K_t . Substituting this experimentally obtained value in the Poiseuille equation, one gets

$$K_t = \left(\frac{A}{\Delta x} \right) \left(\frac{r^2}{8\eta} \right)$$

or

$$r = \sqrt{\frac{8\eta K_t}{A/\Delta x}}$$

But $\frac{A}{\Delta x}$ was measured by the diffusion experiments described above. Therefore, all quantities under the square root sign are known, and the value of r may be calculated.

A typical value for r is 30 Angstrom units, corresponding to a pore about 30 water molecules in diameter. The total

number of such openings required to explain the observed diffusion rates is about 2×10^9 pores per cm^2 of capillary membrane.

A further theory has been developed to predict the hindrance to diffusion through pores of this size which would be expected for any lipid insoluble molecule of known dimensions and diffusion coefficient. The theory describes reasonably well the capillary permeability to all the lipid insoluble molecules which have been investigated so far.

It should be emphasized that this applies only to one class of substances—namely lipid insoluble substances, such as salts, carbohydrates, and proteins. For lipid soluble molecules, such as O_2 , CO_2 , many anesthetics (paraldehyde, urethane, chloral hydrate, etc.), an entirely different type of capillary permeability has been found. These penetrate the capillary wall so rapidly that little or no osmotic pressure is detectable and very probably, by virtue of their solubility in lipids, these molecules dissolve in the plasma membranes of the capillary endothelial cells, thus utilizing a larger area.

Thus, with the help of simple algebraic laws, the investigators have achieved a measure of capillary permeability in terms of the functional structure of the capillary wall. With this added perspective on the phenomenon of capillary permeability, it has been possible to push further ahead along the trail blazed by Starling fifty years ago.

Harvard Medical Society Meeting

MARCH MEETING

The program for the March meeting of the Harvard Medical Society, held on March 20, was presented by Beth Israel Hospital in the George Sherman Auditorium, Dr. Herrman L. Blumgart, presiding.

Papers included the following: "The Colorimetric Method for Serum Cholinesterase," Drs. Herbert A. Ravin, Kwan-Chung Tsou and Arnold M. Seligman; "Thyroid Function in Normal and Pathological States as Revealed by Radioactive Iodine Studies," Dr. A. Stone Freedberg; "Pathological Physiology of Urinary Incontinence," Dr. S. Richard Muellner; "Newer Knowledge of Blood Clotting in Hemorrhagic Disorders," Dr. Benjamin Alexander.

Dr. Ravin presented evidence to show how the presence of serum cholinesterase can be identified by a colorimetric test. In these experiments the enzyme was reacted with a susceptible substrate which, on splitting, yielded a substance that could be reacted with a diazonium salt to form an azo dye of characteristic color. The appearance of the color (a bluish purple in this case) was evidence of the presence of the enzyme.

In general terms, the investigators prepared a stock solution of the substrate, buffered the solution to the optimal pH, added the enzyme, incubated the mixture for a certain period, then added a diazonium salt to convert the naphthol (released from the substrate by the enzyme) into an azo dye. This provides not only a qualitative test, but also a quantitative test, for the amount of free naphthol in excess of controlled hydrolysis without the enzyme is proportional to the amount of enzyme in the system.

The substrate in question is quite specific for serum cholinesterase and is not hydrolyzed by nerve cholinesterase or other esterases in the blood.

The accompanying chart (see page 134)

illustrates the crucial reactions in the preparation of the substrate and subsequent biochemical test:

The first substance in the upper left-hand corner (Beta-naphthol) is reacted with phosgene (COCl_2) to produce naphthyl-carbonic acid chloride (I). This is reacted with dimethyl ethanol amine, to yield the dimethyl ethanol amine ester of 2-naphthol carbonate (II). Reacting this with methyl iodide gives the iodide of carbonaphthoxycholine (III). Serum cholinesterase splits this substrate to naphthyl carbonic acid, which is ephemeral stuff and decarboxylates to naphthol. Naphthol, coupled with a diazonium salt, produces the azo dye of characteristic color.

With this substrate it is possible to demonstrate serum cholinesterase histochemically in fresh tissue sections. By such techniques, and by similar methods in other directions, it may become possible to find a wide variety of histochemical proofs for the presence of certain enzymes. This in turn would open the possibility of studying enzyme differences in disease, giving investigators a new yardstick of pathology. Dr. Ravin pointed out that these experiments are part of a broad integrated approach at Beth Israel aimed at understanding enzyme pathology.

Dr. Freedberg presented data concerned with several aspects of radioiodine metabolism in man, underscoring the fact that in borderline cases of thyrotoxicosis the difficulty of diagnosis is great.

Uptake and turnover of I^{131} in the thyroid in man, which is a measure of the avidity and utilization of this substance, is not a complete solution of the problem but nevertheless constitutes an important advance. Studies of the 24-hour uptake and turnover of tracer doses of I^{131} by the thyroid in normal and abnormal states have been carried out in more than 450 patients, utilizing a quantitative method

for the direct measurement of uptake by external counting. The accuracy of the method has been experimentally delimited. In euthyroid control patients the average 24-hour uptake is 29% and the turnover 7.1 days. In thyrotoxic patients it is 71% and the turnover 5.6 days. The average uptake in hypothyroid patients is 12%. Dr. Freedberg emphasized that uptake and turnover must be considered in the light of the wide variety of conditions which may influence these phenomena.

The possibility of accurate measurement of uptake and turnover afforded the investigators the opportunity of measuring the radiation delivered to the thyroid gland by therapeutic doses of radioiodine in a large group of patients with thyrotoxicosis, thyroid cancer and euthyroid patients with congestive failure or angina pectoris.

Approximately 65 patients with thyrotoxicosis have been studied with tracer doses, with measurement of uptake and turnover; on the basis of this data I^{131} was administered to deliver an estimated 10,000 R.E.P. Subsequent measurement of uptake and turnover of the therapeutic dose showed excellent agreement with the tracer. The patients were for the most part elderly or had cardiac or other problems. Some were so ill that surgery was not possible. The results of I^{131} in these patients have been considered excellent. Approximately 70% have been rendered euthyroid by a single dose. Twenty per cent of the series remains hypothyroid and one patient, while improved, remains persistently thyrotoxic despite four doses totaling 28 millicuries and 33,000 R.E.P.

Results of radioiodine therapy in the treatment of thyroid cancer are more difficult to evaluate. One of 10 patients has had a brilliant result—a metastasis in the lung was destroyed with I^{131} —and this patient, a 15-year-old boy, has been entirely well for 2 years. Two others have had beneficial though not striking results, while the remainder have not been benefited. Doses utilized in these patients have ranged from 25 to 200 millicuries.

Experience with I^{131} in the treatment of 42 euthyroid cardiac patients with intractable angina pectoris or congestive failure refractory to all therapy has been most gratifying. Following the induction of hypothyroidism by I^{131} , one-third of the group has obtained striking remission of symptoms. Rehabilitation has been accomplished and patients have returned to work. Another third has obtained worthwhile and significant improvement, while the remaining third has not been benefited. Dr. Freedberg observed that it is of interest that the delivered radiation required to induce myxedema in these euthyroid patients is of the order of about 50,000 R.E.P. or approximately three times that producing myxedema in hyperthyroid patients.

Dr. Muellner's study showed that the lesion of urinary incontinence is a herniation of the vesicle neck associated with a lack of support of the internal sphincter by the pubococcygeus, the anterior portion of the levator ani.

The mechanism which normal women use to control the urine has never been fully understood. A question which has puzzled physiologists turns on the fact that the bladder is composed of smooth muscle, yet contraction of the bladder is brought about by the will. This is contrary to physiological principles, since involuntary muscle, such as the muscle of the heart or intestine, for example, is not under the control of the will.

Dr. Muellner found that man, in fact, utilizes a group of striated skeletal muscles, somatically innervated, with which to precipitate the reflexes of micturition. The muscle of major importance is the pubococcygeus. Normal women start and stop the flow of urine with this muscle. It has a third function: it supports the bladder neck and bladder base during erect posture and protects the internal sphincter from sudden intra-abdominal pressure changes.

Classical experiments did not delineate these facts, but Dr. Muellner used a simple contrast medium which cast a shadow of

the bladder on the fluoroscopic screen. He instilled this fluid in the bladder by catheter, removed the catheter, then had the subjects void, and stop, on command. This enabled him to observe, on the fluoroscopic screen, the dynamic events of micturition.

Study of the process, fluoroscopically, revealed the lesion of stress incontinence to be a herniation of the vesicle neck which deprives the internal sphincter of support, leading to urinary incontinence when women are in the erect position. The experiments also offer a reasonable physiological and anatomical explanation of why women in the prone position do not normally suffer from urinary incontinence. During the prone position, the herniation is reduced, and the effect of gravity is shifted more toward the posterior wall of the bladder rather than directly to the region of the internal sphincter.

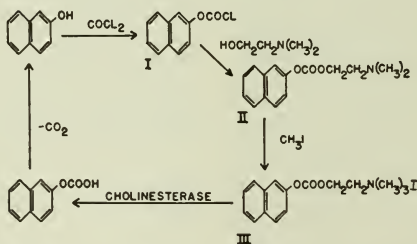
Dr. Alexander discussed the cases of two patients with hemorrhagic diathesis and persistently elevated prothrombin times (70 and 60 seconds, respectively), yet with different coagulation defects. Each case fits into the newer theoretical picture of the blood clotting phenomenon and provides a more precise delineation of clotting disorders.

In the first case, a 4-year-old girl with hemorrhagic phenomena since birth, the clotting time, prothrombin consumption, plasma prothrombin, Ac-globulin, Labile

Factor, and Factor V were normal, but serum prothrombin conversion accelerator (spca) elaboration was poor. Normal serum or purified spca rectified the abnormality in vitro and in vivo. The disorder, hitherto unrecognized, is called "congenital spca deficiency."

In the other subject, a girl of 17 with bleeding episodes since 5, the abnormality was identical with Owren's case of parahemophilia. The following features distinguished this patient from the first: clotting time, elevated (42 min.); Factor V, Ac-globulin, Labile Factor activities were absent; prothrombin consumption poor; spca normal; prothrombin conversion retarded; corrected by normal plasma in vitro and in vivo; serum and spca ineffective.

Dr. Alexander argued that these contrasting features demonstrate the existence of two non-prothrombin plasma constituents important in thrombin evolution: (1) Factor V, which is identical with Ac-globulin and Labile Factor; (2) the inert precursor of spca, which is activated during coagulation. Deficiency of either causes pathological bleeding and elevated prothrombin times simulating hypoprothrombinemia. Both may properly be considered pseudohypoprothrombinemia. Parahemophilia (Factor V deficiency) is benefited by plasma. Spca deficiency is benefited by serum.



Dunham Lecture

One of the world's most distinguished enzyme chemists, Dr. Hugo Theorell, of Sweden, was chosen as this year's Dunham lecturer at the Medical School. Dr. Theorell gave three lectures, in February and March, dealing with various enzyme problems of basic importance in medicine. Selection of Dr. Theorell as the Dunham lecturer was a tribute not only to the outstanding and original work of this scientist in medicine but reflected as well the growing importance of enzymology as a medical discipline.

Dr. Theorell was born on July 6, 1903, in Linköping, Sweden, studied for a medical degree at the Caroline Institute, Stockholm. He was a lecturer in physiological chemistry at the Caroline Institute from 1930 to 1932, was assistant professor of medical chemistry at the University of Uppsala, 1932 to 1936. He also worked with Professor Otto Warburg, Kaiser Wilhelm Institut für Zellphysiologie, Berlin-Dahlem, and since 1937 has been professor and director of the department of biochemistry in the Medical Nobel Institute.

Dr. Theorell is a member of the Swedish Academy of Sciences and the Swedish Academy of Engineering Sciences, holds various medals and awards from Swedish scientific societies. He is an honorary member of Società Chimica Italiana, holds the Pasteur medal of the Société de Chimie Biologique, Paris. He was chairman of the Swedish Medical Society, 1947-48, and of the Swedish Chemical Society, 1947-49.

Dr. Theorell's three lectures, in summary, follow:

1. "On the rate of incorporation of Isotopic Iron into different Hemoproteins": Much work has been done on the distribution of radioactive isotopes of iron in the animal and human, but little data have been available on the appearance of isotopic iron in hemoproteins other than hemoglobin (e.g., catalases, cytochrome and myoglobin). These iron-containing

proteins are no less essential to life than hemoglobin but are much less accessible to experimental studies because they are present in such small quantities in the body. Experiments presented by Dr. Theorell were made possible through the advances of fifteen years in the isolation and purification of these hemoproteins. The amounts of enzyme that had to be isolated for determining the specific radioactivity were in some cases as low as .01 mg. Experiments were carried out on guinea pigs, fifteen of which had to be sacrificed each time in order to obtain a determination.

Results indicate that cytochrome-c and myoglobin, both present in muscle, have an amazingly long lifetime under physiological conditions. This is especially true for myoglobin. This result checks well with clinical observations on human patients, according to which muscles maintain their myoglobin content independently of variations in the iron content of the body. On the other hand, the catalases in the liver and the red blood cells, have a rather short life cycle. This explains why rapid changes in the liver catalase content can occur when a tumor is implanted in the liver. The catalases are built up in different organs but are identical independently of their origin.

2. "Magnetochemical and other investigations of Myoglobin": Myoglobin, the iron-containing protein which is responsible for the red color of muscle, is so similar to hemoglobin that it was not distinctly distinguished from hemoglobin until twenty years ago. It was crystallized for the first time by Dr. Theorell in 1932, at which time it became obvious that it differed considerably more from hemoglobin than was supposed. The myoglobin molecule, for example, is four times smaller than the hemoglobin molecule and it has a much stronger tendency to bind oxygen. The work of Conant and Wyman

at Harvard showed that the oxygen-binding function of hemoglobin was regulated principally by reactions between iron and the amino acid histidine. Dr. Theorell's investigation was aimed at finding out whether the same mechanism was operating in myoglobin. The magnetic properties of myoglobin were studied by a refined method giving considerably more accurate results than the old ones. As a result of such measurements, in conjunction with light absorption determinations and titrations, it could be concluded that histidine has no essential function in the oxygen binding of myoglobin.

3. "The Kinetics and Mode of Action of Alcohol Dehydrogenase": Alcohol dehydrogenase is an enzyme in liver that brings about the combustion of ethyl alcohol. The collaboration of a so-called enzyme (DPN) is needed for this reaction. The enzyme was crystallized in pure state two years ago by Bonnicksen and Wassen at the Medical Nobel Institute. Dr. Theorell presented a detailed study of the interrelations between the enzyme, DPN, alcohol and its oxidation product—acetaldehyde—and the degree of acidity. This enzyme system has been used for determining ethyl alcohol in a specific way in small blood samples and samples from other body fluids and organs, for forensic purposes. Some discrepancies between the results obtained with these specific methods and with less specific ones hitherto used were discussed.

The Dunham Lectureship for the Promotion of the Medical Sciences was founded in 1923 in memory of Dr. Edward K. Dunham, who received his M.D. degree from Harvard Medical School in 1886. The lectures are designed to strengthen "the bonds of fellowship and understanding between students and investigators in this and foreign countries."



HARVARD MEDICAL SOCIETY OF NEW YORK

On April 5, the Harvard Medical Society of New York held its annual dinner at the Harvard Club of New York. Dr. James B. Conant was the guest of honor and gave a most interesting talk including an off-the-record discussion of public affairs. The question period was lively and the President handled this admirably.

Philip D. Wilson, '12, president of the Harvard Medical Alumni Association, made a brief announcement emphasizing the necessity of greater alumni support for the Medical School.

There were a number of out-of-town guests, including Myles Standish from Hartford and Edward L. Bortz and John Hubbard from Philadelphia. A total of 125 alumni attended the dinner.

The officers of the Society elected were: Irving Cabot, '20, president; George M. Wheatley, '33, vice-president; Kenneth W. Thompson, '29, secretary-treasurer.

Elected for membership: Edward H. Ahrens, Jr., '41, Raymond C. Collins, '41, Geoffrey W. Esty, '31, Calderon Howe, '42, Elliott S. Hurwitt, '37, Joseph M. Kuder, '19, Guy H. Laudig, '36, Ferdinand F. McAllister, '39, Burness E. Moore, '38, Joseph E. Murray, '43-B, John Scudder, '27, Wallace M. Sheridan, '35, Israel Steinberg, '28, Thomas W. Stevenson, '29, Luther M. Strayer, '30, Paul Van W. Waldo, '31, and Eugene L. Watkins, '43-B.

GEORGE M. WHEATLEY, '33

ROCKY MOUNTAIN HARVARD MEDICAL SCHOOL ALUMNI ASSOCIATION

The fourth annual Harvard Lecture will be given by William B. Castle, '21, at the University of Colorado Medical Center on November 8. Following Dr. Castle's lecture there will be a dinner in his honor at The University Club, to be attended by alumni of the Harvard Medical School in the Rocky Mountain area. It is anticipated that the following morning, Saturday, there will be a "live clinic" given by Dr.

Castle at the Denver General Hospital. This preliminary announcement is being made so that as many as possible can plan to attend the activities in connection with Dr. Castle's visit to Colorado, to which we are looking forward with very pleasant anticipation.

Previous Lecturers in this already notable series have been Doctors Fuller Albright, '24, Marius N. Smith-Petersen, '14, and James Howard Means, '11.

This Lectureship is supported entirely by voluntary contributions from interested alumni of the Harvard Medical School. Anyone who is so interested is invited to send his contribution, in any amount up to, but not to exceed \$10.00, to our Treasurer, Dr. Henry Swan, II, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver, Colorado.

Dr. Castle received his degree from the School in 1921 and is currently Professor of Medicine in the Harvard Medical School and Director of the Thorndike Memorial Laboratory. He is widely known for his life-long work in hematology, and particularly for his basic and enduring contributions to our knowledge of pernicious anemia.

IRA DIXSON, '28

Book Reviews

NEUROLOGY AND PSYCHIATRY IN GENERAL PRACTICE. By Henry R. Viets, M.D., in collaboration with Charles Burlingame, M.D., Clarence B. Farrar, M.D. and Z. M. Lebensohn, M.D. 146 pages. New York, New York: Grune and Stratton, 1950. Price \$3.50.

This volume of 146 pages is a concise report of a three-day conference held at the Clinical Session of the American Medical Association in December 1949. Thirty-three doctors participated in the conference which was devoted to a discussion of certain neurological and psychiatric problems of particular interest to the general

practitioner. The material presented has been skilfully arranged in this book. The first section deals with present day approaches to and management of epilepsy, Parkinsonism, the disabled neurologic patient, neurosyphilis and headache and discusses the clinical value of the electroencephalogram.

The second part of the book is devoted to psychiatry. Emphasis is placed on the responsibility of the general practitioner in diagnosing, treating and referring psychoneurotic and psychotic patients. Various techniques employed in the management of such patients are presented. Attention is given to the uncooperative medical patient, alcoholism, and anxiety reactions. There is a brief discussion of psychosomatic medicine.

The material included in this book is practical and is presented in a simplified form. It should be valuable to physicians not trained in neurology and psychiatry.

RAYMOND A. ADAMS, M.D.

ILLEGITIMATE SONNETS. By Merrill Moore, M.D. 125 pages. New York, New York: Twayne Publishers, Inc., 1950. Price, \$2.75.

In his latest and best book of sonnets Dr. Moore firmly consolidates his position as one of America's leading avocational poets.

This book, in the opinion of the reviewer, is much superior to the originally published "thousand"; it is in a class with, but better than, the book of *Clinical Sonnets* that preceded it.

Tastes in poetry vary from complete indifference to idolatrous worship of the rhythm of formal meter and the finality of the perfect rhyme. The average appreciation of verse includes the requirement that substance be combined with form.

Merrill Moore now finds, as he planishes his lines, that he cannot help beating out measures with the tapping of his hammer.

Take, for example, the spiders in the empty house:

With nothing, out of nothing, they had built
A fabulous community of thread,
Waving and spacious, planned as far ahead
As any modern city, serving all
The spiders living on the dusty wall,
Miraculously watered, sheltered, fed.

J. G.*

*Reprinted, by permission, from the *New England Journal of Medicine*, vol. 244, no. 14, April 5, 1951.

Correspondence

FOOTNOTES TO "ASCLEPIUS IN ARMS"

To the Editor:

The scholarly article by Dr. William Dock in the April number of the BULLETIN entitled "Asclepius in Arms" is worthy of close study in these uncertain days. It expresses clearly some of the frustrations which medical men have had to face while in service, but left this reader, at least, with the impression that little, if anything, has been done by the Armed Forces "in five years of atrophy" since V-J Day to improve its military medical program. If this impression is generally held by readers of the BULLETIN, I think a few words in amplification of Dr. Dock's article are in order.

Dr. Dock writes from the point of view of a high-ranking teacher of medicine. It is interesting to your correspondent to recall the interest shown in the Army's medical reserve program between World Wars I and II, a time when most available training was focussed upon the medical service of regiments and divisions in the field, under the auspices of an admirable Field Service School at Carlisle Barracks, Pennsylvania. In the Greater Boston community at least such interest as was shown was on the part of reservists who saw the need for such training, and who took or "made" the time to follow it. Did this appeal to the "brass" of medical teaching at the time? Not appreciably. With the outstanding exception of the late Alexander Begg, then Dean of the Boston University School of Medicine, there were only a handful of men of faculty rank who gave it any degree of active support.

Dr. Dock states that after World War II ended "the Army was entering the next period of disarmament with a very capable group of Regular Army officers, thanks to the pressure of war." I assume he is aware of the work which was done by the Surgeon General in the past five years to afford adequate career training for Regular Army doctors along the line of specialization in the professional specialties as well as in command and administrative functions. I assume he is aware of the constant and unremitting work which has been done to effect better utilization of physicians in the service and to relieve all those who prefer professional work in medicine, surgery and the specialties from command and administrative duties. If he is not aware of these points he is less than just to the "very capable group of Regular Army officers" whom he mentions, for they are in the forefront of the work which has been done.

So much for the Regulars. To what extent has civilian medicine shown interest in the re-

serve program since the late war? Again, in this community, the proportion of "brass" of medical teaching which has shown interest in finding out what the Armed Forces Medical Services are attempting to do is very small indeed. Many who have taken trips to overseas theatres since 1945 as medical and surgical consultants have neither joined the Active Reserve nor shown the slightest interest in reserve affairs. Their contributions as consultants have been of inestimable value but their contributions to Asclepius in Arms are not so clear.

Criticising the Armed Forces for not creating a perfect medical world for the physicians who must serve on active duty in time of war (or mobilization) is akin to criticising the clergy for not abolishing sin in the world at large. Both organizations need the constant and unremitting cooperation of the laity. It may be hoped (though probably not expected) that more constructive support for the Armed Forces Medical Services will be forthcoming in future from Asclepius in Civilian Life than has been the case in the past.

THOMAS R. GOETHALS, '16

To the Editor:

I read Dr. William Dock's "Asclepius in Arms" in the Alumni BULLETIN. I think it thrilling and I feel it would be "wasting its sweetness on the desert air" unless it be given a wider circulation. At the very least it deserves republication in the New England Journal!

ADOLPH MELTZER, M.D.

Worcester, Massachusetts

To the Editor:

I am sending a copy of my latest book, "Illegitimate Sonnets" for review.

At the same time, I wish to express my appreciation for the splendid review that you gave my previous volume, "Clinical Sonnets".

I am happy to let you know that these books are selling fairly well and are meeting with unusual literary success, so it appears I shall be bringing out one each year for awhile—barring accidents.

You may be sure I shall see that copies are sent to the HARVARD MEDICAL ALUMNI BULLETIN.

MERRILL MOORE, M.D.



The Stethoscope



This is the period of the year, as a fore-runner to Commencement, when compliments of various kinds begin to be interchanged. Joseph C. Aub, HMS 1914, has received the medal of 1951 from the American Cancer Society. Arthur T. Hertig, HMS 1930, has been given by his Alma Mater, the University of Minnesota, at its Centennial celebration, the Outstanding Achievement Medal for 1951—a medal reserved for former students of the institution who have attained high eminence and distinction. A. Baird Hastings, S.D. 1945 (hon.), has been elected a member of the Royal Danish Academy of Sciences and Letters. And the Department of Legal Medicine has received a letter from Illinois addressed to the Harvard School of Legal Medicine, New Haven, Connecticut.—Two portraits have been hung in the Administration Building in panels over the stairway which leads to the library. One is of President Eliot, HMS (hon.) 1909, who in 1906, when our present buildings were opened, dedicated them to the teaching of the Medical and Surgical Arts and to the pursuit of the Biological and Medical Sciences. The other is of Charles Allerton Coolidge, HC 1881. When he was awarded an Honorary Degree by Mr. Eliot he was characterized as the designer of our buildings “in which are combined spaciousness, splendor of material, fine grouping, durability and careful adaptation to their special uses.” As one thinks of the procession of great teachers working here

during the past forty-one years and of their achievements both in teaching and research, one feels that what President Eliot and Mr. Coolidge had in mind for the future of the School, in its newest quarters, has been honorably pursued.—The Harvard Crimson recently contained an article entitled “Medical Students Organize Against Wave of Thievery.” It appears that minor thefts have occurred there for several months climaxed by the disappearance of a 1950 Mercury, later found in Connecticut, and by the removal of the door from a 1951 Chevrolet car. The matter was reported to Dean Berry who at once took control of the situation.—The Apocrypha of John Homans, HMS 1903, is always interesting. The most recently unearthed chapter deals with the days when he was an assistant to Dr. Maurice H. Richardson, HMS 1877. Dr. Richardson had a trotting horse of distinguished pedigree who became afflicted with an abdominal distemper, characterized by an alarming distension. Dr. Richardson, assisted by J. H., attempted to effect a cure by an abdominal operation. A few days later the wound blew open. Dr. Richardson was baffled. J. H. said, “I should like to see what I can do.” Dr. Richardson peered at him over his glasses and said, “Do you think you can do a better job than I did?” “I don’t know, but I’d like to try.” J. H. did whatever needed to be done locally and then performed a tracheotomy. “Why did you do that?” said Dr. Richardson. “So as to let the wind out both ways at once,” replied J. H. The patient made an uneventful and successful recovery.—Spring is here. It is the time of final examinations, a tendency towards relaxation and tennis or baseball, when the quadrangle is beginning to promise to look its best for Class Day and the meeting of the Alumni. Be sure to return to the School on May 25th and 26th!

ASSOCIATION OFFICERS

PHILIP D. WILSON, *President*
 HERBERT B. WRIGHT, *Vice-President*
 J. ENGLEBERT DUNPHY, *Secretary*
 JOSEPH S. LICHTY, *Treasurer*

COUNCILLORS

C. Sidney Burwell	Tracy J. Putnam
Richard B. Capps	William T. Salter
John F. Fulton	J. Gordon Scannell
Donald S. King	John D. Stewart
	Richard Warren

Mrs. K. B. Wilson, *Executive Secretary*
 Harvard Medical School
 Boston 15, Massachusetts

Alumni Relations

Elsewhere in this issue of the BULLETIN appears the announcement of the appointment of Dr. Thomas H. Lanman as Director of Alumni Relations. This appointment is concrete evidence of the vitality of the new plans for the development of our Association which the Council has been working on for the past year. Why did the Council of the Harvard Medical Alumni Association choose this moment for reorganization and for these extensive plans for new activity?

The answer appears to be something like this: Medicine has never had so much to offer the world as it has at this moment. Medical schools, therefore, have never had such an opportunity or such a responsibility. At the same time, the quantitative problems of effective survival (man power and money) place the medical schools at this crucial moment in a position of acute difficulty. Factors in this difficulty are many. They include the recent development of new activities required of medical schools, including post-graduate instruction, expanding research, changing methods of teaching, and an in-

crease in the number of undergraduate students. These new obligations and duties unhappily coincide in time with a falling interest rate on endowment funds, and, more recently, with a tragic decline in the purchasing power of the dollar.

The alumni of the Harvard Medical School, who now number over 5,000, can be and wish to be useful to the School in this critical time. The School has a duty and a desire to keep the alumni better informed about the problems and progress of medical schools in general and the many-sided activities of the Harvard Medical School in particular. Therefore, the Council, under the vigorous presidency of Dr. Philip Wilson, 1912, has taken the important step of appointing a Director of Alumni Relations. It is prepared to set up a competent office to assist him and to help him embark on a long-term program of bringing the Harvard Medical School and its graduates into effective collaboration.

What specifically is meant by such a long-term program? It means the improvement of communications between faculty and alumni; it means the organization of meetings between alumni and the School faculty, such as the Alumni Day planned for May of this year; and it means a more effective organization of the alumni body. This organization should include regional (geographic) units as well as the familiar units based on year of graduation. The whole enterprise is an organized attempt, originating with the alumni, to supply material and spiritual help to medical education and the Harvard Medical School at this crucial time in the history of both. The Association and the School are both very fortunate that Tom Lanman has consented to undertake this vital and challenging task. He knows the School, he knows the alumni, he knows the country. He will give to the task wisdom and energy. He will have the cordial and generous help of all his fellow alumni.

